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09/475,563	12/30/1999	DAVID P. WILLIAMS	RA-5281	6509

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UNISYS CORPORATION
CHARLES A JOHNSON
POST OFFICE BOX 64942
MS 4773
ST PAUL, MN 551640942

EXAMINER

WOOD, WILLIAM H

ART UNIT	PAPER NUMBER
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2124

DATE MAILED: 03/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/475,563

Applicant(s)

WILLIAMS, DAVID P.

Examiner

William H. Wood

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 19-22 is/are allowed.
- 6) ☒ Claim(s) 1-21 and 23-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-36 are pending and have been examined.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 35-36 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The newly added claims contain the limitations of commencement events and termination events independent of operational events. This could not be found in the original specification in a reasonable manner.
3. Claims 35-36 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The newly added limitations are not enabled by the originally filed specification. The difference between the commencement and termination events from operation events is unclear. Applicant argued, with respect to claim 1, **Mann and Ryan** fail to disclose the newly added limitation *designation of operational events occurring in the computing environment*. This wording is interpreted as *commencement events* and

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termination events found in claims 4 and 5. No reasoning for interpreting this otherwise could be found in the disclosure. The broadest reasonable interpretation of "operational events" (terminology not present in the specification) is any event occurring during operation. This includes break-pointing for an address, as addresses occur during operation. Thus, commencement and termination events cannot be "independent" from operation events.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 35-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The difference between the commencement and termination events from operation events is unclear. Applicant argued, with respect to claim 1, **Mann and Ryan** fail to disclose the newly added limitation *designation of operational events occurring in the computing environment*. This wording is interpreted as *commencement events* and *termination events* found in claim 4 and 5. No reasoning for interpreting this otherwise could be found in the disclosure. Thus, claims 35 and 36 are vague and indefinite as it is unclear how operational events can be independent from commencement and termination events.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mann (USPN 5,978,902) in view of Ryan et al. (USPN 6,530,076). The newly added amendments are rejected in the same manner as the claims to which they are amended. They do not change the scope of the claims.

In regard to claim 1, Mann disclosed the limitations:

- ♦ *A method for selectively collecting information from a plurality of logical segments in a computing environment (column 1, lines 11-15; column 10, lines 15-67), the method comprising:*
 - ♦ *controllably designating at least one of a plurality of data collection periods based on operational events occurring in the computing environment, each of the plurality of data collection periods defining a respective temporal window in which storage of the designated set of information is enabled (column 22, lines 33-35); and*
 - ♦ *storing the designated set of information identified by the designated information storage mode only during the temporal window corresponding to the designated data collection period (column 22, lines 33-35)*

Mann did not explicitly state *controllably designating one of a plurality of information storage modes, wherein each of the information storage modes identifies a different set of information from the plurality of logical segments to be stored*. Ryan demonstrated that it was known at the time of invention to selectively trace various processor signals

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(column 6, line 66 to column 7, line 2; column 9, lines 16-18, lines 63-65; Figure 9; mode is a function of what is to be traced). It would have been obvious to one of ordinary skill in the art at the time of invention to implement Mann's tracing processor with selectively tracing various signals as found in Ryan's teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to record only required signals to save processor work and memory space (Ryan: column 1, lines 40-52; column 2, lines 40-46).

In regard to claim 2, Mann and Ryan further disclosed the limitation *further comprising controllably designating an information retrieval mode, wherein retrieval of the stored set of information is enabled in response thereto* (Mann: column 31, lines 48-50 and 53-57).

In regard to claim 3, Mann and Ryan further disclosed the limitation *wherein controllably designating an information retrieval mode comprises substituting the designation of the information storage mode with the designation of the information retrieval mode* (Mann: column 31, lines 48-50 and 53-57).

In regard to claim 4, Mann and Ryan further disclosed the limitation *wherein controllably designating at least one of a plurality of data collection periods comprises controllably designating a data collection commencement event, wherein the data collection period*

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commences upon recognition of the data collection commencement event (Mann: column 22, lines 33-35).

In regard to claim 5, Mann and Ryan further disclosed the limitation *wherein controllably designating at least one of a plurality of data collection periods comprises controllably designating a data collection termination event, wherein the data collection period terminates upon recognition of the data collection termination event* (Mann: column 22, lines 33-35).

In regard to claim 6, Mann and Ryan further disclosed the limitation *further comprising dynamically reconfiguring the information storage modes to designate a different set of information from a different one of the plurality of logical segments to be stored* (Ryan: column 2, lines 40-46).

8. Claims 7-18 and 23-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mann (USPN 5,978,902) in view of Ryan et al. (USPN 6,530,076) and in further view of Torrey et al. (USPN 6,145,123). The newly added amendments are rejected in the same manner as the claims to which they are amended. They do not change the scope of the claims.

In regard to claim 7, Mann and Ryan did not explicitly state the limitation *further comprising dynamically reconfiguring the data collection periods to designate a different*

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temporal window in which storage of the designated set of information is enabled.

Torrey demonstrated that it was known at the time of invention to dynamically designate windows of trace capture (Torrey: column 6, lines 55-65; column 7, lines 46-67; instructions for accessing breakpoint registers allow for dynamic reconfiguration; also Figure 4). It would have been obvious to one of ordinary skill in the art at the time of invention to implement Mann and Ryan's tracing system with dynamic reconfiguration of tracing window as found in Torrey's teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to by the fact that Torrey is discussing a similar tracing processing system as Mann and both are using breakpoint registers (Mann: column 33-35; Torrey: column 6, line 56 to column 7, line 45) and both have a ITCR register (Torrey: column 9, lines 31-35).

In regard to claim 8, Mann, Ryan and Torrey further disclosed the limitations:

- ♦ *wherein controllably designating at least one of a plurality of data collection periods comprises controllably designating a data collection commencement event, wherein the data collection period commences upon recognition of the data collection commencement event;*
- ♦ *wherein controllably designating at least one of a plurality of data collection periods comprises controllably designating a data collection termination event, wherein the data collection period terminates upon recognition of the data collection termination event; and*

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- ♦ *further comprising reconfiguring the data collection periods by dynamically reconfiguring at least one of the data collection event and the data termination event.*

Claim is rejected in the same manner as claims 4, 5 and 7 above.

In regard to claim 9, Mann, Ryan and Torrey disclosed the limitations:

- ♦ *A system for selectively collecting information in a computing environment having a plurality of functional modules, wherein each functional module is associated with time-varying operational information as each functional module operates, and wherein analysis of the operational information may be used to identify operational defects in the computing environment, the system comprising:*
 - ♦ *a memory for storing the operational information associated with the functional modules;*
 - ♦ *a dynamically-configurable write mode selection module coupled to a control interface to receive one of a plurality of selectable write mode identifiers, and to enable selected subsets of the operational information to be stored in the memory in response to the received write mode identifier; and*
 - ♦ *a dynamically-configurable timing control module coupled to the control interface to receive one of a plurality of collection initiation identifiers and one of a plurality of collection termination identifiers, to enable storing of*

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the selected subset of operational information into the memory upon activation of an initiation event corresponding to the received collection initiation identifier, and to terminate storing of the selected subset of operational information into the memory upon activation of a termination event corresponding to the received collection termination identifier.

Claim limitations correspond to claim 8, therefore rejection of claims 1, 4, 5, 7 and 8 is incorporated herein.

In regard to claim 10, Mann, Ryan and Torrey disclosed the limitations corresponding to claim 9 (claim 9 rejection incorporated herein). Ryan and Torrey did not explicitly state the limitation *wherein the dynamically-configurable write mode selection module comprises a write mode scan register that is loaded via a dynamic scan operation.*

Torrey demonstrated that it was known at the time of invention to utilize scan registers for information (column 9, lines 31-35). It would have been obvious to one of ordinary skill in the art at the time of invention to implement Mann, Ryan and Torrey's registers as scan registers as found in Torrey's teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to use a common method of register implementation.

In regard to claim 11, Mann, Ryan and Torrey disclosed the limitations corresponding to claim 9 (claim 9 rejection incorporated herein). Mann, Ryan and Torrey further disclosed the additional limitation *wherein the dynamically-configurable timing control*

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module comprises a timing control scan register that is loaded via a dynamic scan operation (Torrey: column 6, line 56 to column 7, line 67; column 9, lines 31-35; Mann: column 10, lines 15-67; ITCR register and D0-7 registers).

In regard to claim 12, Mann, Ryan and Torrey disclosed the limitations corresponding to claim 9 (claim 9 rejection incorporated herein). Mann, Ryan and Torrey further disclosed the additional limitation *wherein the dynamically-configurable write mode selection module further comprises means for enabling the selected subset of the operational information to be stored in the memory if the subset of operational information changes from a first defined time to a second defined time, in response to a corresponding write mode selection identifier* (Ryan: column 2, lines 40-46).

In regard to claim 13, Mann, Ryan and Torrey disclosed the limitations corresponding to claim 9 (claim 9 rejection incorporated herein). Mann, Ryan and Torrey further disclosed the additional limitation *wherein the dynamically-configurable write mode selection module further comprises means for enabling the selected subset of the operational information to be stored in the memory, if a current function value within the selected subset of operational information matches a predetermined function value, and if a current address value within the selected subset of operational information matches a predetermined address value, in response to a corresponding write mode selection identifier* (Mann: column 10, lines 15-67; Torrey: column 31-35).

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In regard to claim 14, Mann, Ryan and Torrey disclosed the limitations corresponding to claim 9 (claim 9 rejection incorporated herein). Mann, Ryan and Torrey further disclosed the additional limitation *wherein the dynamically-configurable write mode selection module further comprises means for enabling the selected subset of the operational information to be stored in the memory if the subset of operational information is received from a predetermined one or more of the functional modules* (Ryan: column 9, lines 16-18).

In regard to claim 15, Mann, Ryan and Torrey disclosed the limitations corresponding to claim 9 (claim 9 rejection incorporated herein). Mann, Ryan and Torrey further disclosed the additional limitation *wherein the dynamically-configurable timing control module comprises a dynamically-scannable register coupled to the control interface to receive and store the collection initiation identifiers and the collection termination identifiers, wherein the dynamically-scannable register includes a plurality of outputs to provide capture enable/disable signals to enable storing of the selected subset of operational information into the memory upon activation of an initiation event corresponding to the collection initiation identifier, and to terminate storing of the selected subset of operational information into the memory upon activation of a termination event corresponding to the collection termination identifier* (Mann: column 19, lines 20-50).

In regard to claim 16, Mann, Ryan and Torrey further disclosed the limitations:

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- ♦ *a data interface coupled to receive the operational information from the functional modules (Ryan: Figure 9, elements 59 and 216); and*
- ♦ *a multiplexing module coupled to the data interface to exclude the operational information external to the selected subset of operational information identified by the selectable write mode identifiers (Ryan: Figure 9, elements 59, 208, 216 and 218).*

In regard to claim 17, Mann, Ryan and Torrey did not explicitly state *further comprising a write data register coupled to the multiplexing module to receive and store the selected subset of operational information*. Official Notice is taken that it was known at the time of invention to utilize registers for storing or latching information or data. It would have been obvious to one of ordinary skill in the art at the time of invention to implement Ryan and Torrey's system of capturing trace data with a register for storing information going from Ryan's multiplexor to the Trace Ram (Figure 9). This implementation would have been obvious because one of ordinary skill in the art would be motivated by using some common easy to implement mechanism (a register latch) for bus 218.

In regard to claim 18, Mann, Ryan and Torrey further disclosed the limitation *further comprising a dynamically configurable read mode selection module coupled to the control interface to receive a selectable read mode identifier, and to enable the selected*

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subset of operational information stored in the memory to be accessed (Mann: column 31, lines 48-57; Torrey: column 9, lines 31-35).

In regard to claim 23, Mann, Ryan and Torrey disclosed the limitations corresponding to claim 9 (claim 9 rejection incorporated herein). Ryan and Torrey disclosed the limitation *wherein the computing environment is an integrated circuit, and wherein at least one of the plurality of functional modules are predetermined logical sections of the integrated circuit* (Ryan: column 9, lines 16-18).

In regard to claim 24, Mann, Ryan and Torrey further disclosed the limitation *wherein at least one of the plurality of functional modules are external to the integrated circuit* (Mann: column 7, lines 40-43).

In regard to claim 25, Mann, Ryan and Torrey disclosed the limitations:

- ♦ *A method for selectively collecting information from a plurality of functional modules in a computing environment, the method comprising:*
 - ♦ *designating one of a plurality of information storage modes, wherein each of the information storage modes identifies a different set of information from the plurality of functional modules to be stored;*
 - ♦ *designating one of a plurality of storage commencement events, wherein each of the storage commencement events identifies a different triggering event to enable storage of the designated set of information to begin;*

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- ♦ *designating one of a plurality of storage termination events, wherein each of the storage termination events identifies a different triggering event to discontinue storage of the designated set of information;*
- ♦ *monitoring for activation of the designated storage commencement event;*
- ♦ *enabling storage of the designated set of information, as governed by the designated information storage mode, upon recognition of the activation of the designated storage commencement event;*
- ♦ *monitoring for activation of the designated storage termination event; and*
- ♦ *disabling storage of the designated set of information upon recognition of the activation of the designated storage termination event.*

Claim limitations correspond to claim 8, therefore rejection of claims 1, 4, 5, 7 and 8 is incorporated herein.

In regard to claim 26, Mann, Ryan and Torrey further disclosed the limitation *wherein enabling storage of the designated set of information comprises storing the designated set of information in a memory, and wherein the method further comprises retrieving the set of information stored in the memory* (Mann: column 31, lines 48-50 and 53-57; Ryan: column 2, lines 40-46).

In regard to claim 27, Mann, Ryan and Torrey further disclosed the limitation *further comprising reconfiguring the designated information storage mode to designate an information retrieval mode, and wherein retrieving the set of information comprises*

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retrieving the set of information from the memory in response to the designation of the information retrieval mode (Mann: column 31, lines 48-50 and 53-57; Ryan: column 2, lines 40-46).

In regard to claim 28, Mann, Ryan and Torrey further disclosed the limitation *wherein reconfiguring the designated information storage mode comprises dynamically scanning a retrieval mode identification into a scan register to designate the information retrieval mode* (Mann: column 31, lines 48-57).

In regard to claim 29, Mann, Ryan and Torrey further disclosed the limitation further comprising *reconfiguring the designated information storage mode to designate another one of the plurality of information storage modes* (Ryan: column 2, lines 40-46).

In regard to claim 30, Mann, Ryan and Torrey disclosed the limitations corresponding to claims 25 and 29 (claims 25 and 29 rejection incorporated herein). Mann, Ryan and Torrey did not explicitly state the limitation *wherein reconfiguring the designated information storage mode comprises dynamically scanning a storage mode identification into a scan register to designate the information storage mode*. Torrey demonstrated that it was known at the time of invention to utilize scan registers for information (column 9, lines 31-35). It would have been obvious to one of ordinary skill in the art at the time of invention to implement Mann, Ryan and Torrey's registers as scan registers as found in Torrey's teaching. This implementation would have been

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obvious because one of ordinary skill in the art would be motivated to use a common method of register implementation.

In regard to claim 31, Mann, Ryan and Torrey further disclosed the limitation *further comprising reconfiguring the designated storage commencement event to designate another one of the plurality of storage commencement events* (Torrey: column 6, line 56 to column 7, line 67).

In regard to claim 32, Mann, Ryan and Torrey did not explicitly state *wherein reconfiguring the designated storage commencement event comprises dynamically scanning a storage commencement identification into a scan register to designate the storage commencement event*. Torrey demonstrated that it was known at the time of invention to utilize scan registers for information (column 9, lines 31-35). It would have been obvious to one of ordinary skill in the art at the time of invention to implement Mann, Ryan and Torrey's registers as scan registers as found in Torrey's teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to use a common method of register implementation.

In regard to claim 33, Mann, Ryan and Torrey further disclosed the limitation *further comprising reconfiguring the designated storage termination event to designate another one of the plurality of storage termination events* (Torrey: column 6, line 56 to column 7, line 67).

In regard to claim 34, Mann, Ryan and Torrey did not explicitly state wherein reconfiguring the designated storage termination event comprises dynamically scanning a storage termination identification into a scan register to designate the storage termination event. Torrey demonstrated that it was known at the time of invention to utilize scan registers for information (column 9, lines 31-35). It would have been obvious to one of ordinary skill in the art at the time of invention to implement Mann, Ryan and Torrey's registers as scan registers as found in Torrey's teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to use a common method of register implementation.

Response to Arguments

9. Applicant's arguments filed 16 December 2003 have been fully considered but they are not persuasive. Applicant argued: ⁱ⁾ **Mann** and **Ryan** fail to disclose the designation of operational events occurring in the computing environment; ⁱⁱ⁾ **Mann** and **Ryan** fail to disclose data collection periods; ⁱⁱⁱ⁾ **Ryan** fails to disclose designating one of a plurality of storage modes (Amendment: page 18); ^{iv)} there is no motivation to combine **Mann** and **Ryan**; ^{v)} **Torrey** was combined using hindsight; ^{vi)} claim 9 includes features different from the cited relating claims used to make the rejection; ^{vii)} claims 10-13, 23 and 30 are allowable; ^{viii)} with respect to claim 10, 11 and 30, **Torrey** failed to disclose dynamic scan operations (Amendment: pages 23-24 and 27); ^{ix)} with respect to claim 10, no motivation to combine **Torrey**; ^{x)} claim 12's limitation, **Mann**, **Ryan** and

Torrey did not disclose dynamically-configurable write mode selection enabling different selected subsets of information storage for a first to second defined times (Amendment: page 24); ^{xi)} with respect to claim 13, cited prior art did not disclose the additional limitation concerning enabling the selected subset of information to be stored in memory, if a current function value within the selected subset of information matches a predetermined address value (Amendment: page 25); ^{xii)} with respect to claim 24, **Mann** does not relate to a plurality of functional modules external to the integrated circuit (Amendment: page 26). Applicant's assertions are incorrect.

First, applicant argued **Mann** and **Ryan** fail to disclose the newly added limitation *designation of operational events occurring in the computing environment*. This wording is interpreted as *commencement events* found in claim 4. No reasoning for interpreting this otherwise could be found in the disclosure. The broadest reasonable interpretation of "operational events" (terminology not present in the specification) is any event occurring during operation. This includes break-pointing for an address, as addresses occur during operation.

Second, applicant argued **Mann** and **Ryan** fail to disclose the limitation *data collection periods*. As indicated in the rejection multiple break point registers identify multiple starting and stopping locations. Starting at location A and ending a B identifies one collection period. Starting and stopping at locations C and D respectively, identifies another period. Thus, the cited prior art disclosed a plurality of collection periods, along with a plurality of commencement and terminating events.

Third, Applicant argued **Ryan** fails to disclose a plurality of storage modes. As cited in the previous rejection, **Ryan** disclosed selectively tracing various processor signals (column 6, line 66 to column 7, line 2). The claimed invention states *controllably designating one of a plurality of information storage modes, wherein each of the information storage modes identifies a different set of information from the plurality of logical segments to be stored* (claim 1, emphasis added). The broadest reasonable interpretation of this is that *each* mode identifies a different set of information (**Ryan** selectively traces differing signals, this is a mode identified by the fact that those signals where chosen) from *the plurality* of segments (or in other words the tracing the multiple or all executed code segments available in the prior art). Applicant's claim language reads upon the **Mann** and **Ryan** cited prior art.

Fourth, Applicant argued a lack of motivation to combine **Mann** and **Ryan**. Applicant further asserts that "to record only required signals to save processor work and memory space" is generic and offers not motivation to one of ordinary skill in the art. Yet, incredibly Applicant ignores the previously cited passage of motivation in **Ryan** (column 1, lines 40-52; column 2, lines 40-46). These passages clearly indicates at very least the authors of **Ryan** would be motivated by the fact that "[s]olving internal processor problems would be significantly eased if a mechanism were available to dynamically and selectively trace the various internal signals ...". The motivation comes directly from those of ordinary skill in the art.

Fifth, Applicant again argued motivation, stating **Torrey** was combined using "impermissible hindsight". Applicant ignores the disclosure of both inventions, which

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just by reading demonstrate analogous art (tracing using breakpoint registers). One would be motivated by the fact that **Mann** and **Torrey** recited embodiments of the *same* system. Both admit relations to provisional application 60/043,070 (**Mann**: column 1, lines 5-9; **Torrey**: column 1, lines 6-10). One of ordinary skill in the art of tracing would recognize the advantages of **Torrey** through a flexible tracing system (lots of options and customizable features to gather just the information necessary, thus not wasting time and memory; see column 3, lines 40-56).

Sixth, Applicant argued claim 9 includes features different from the cited relating claims used to make the rejection. Perhaps, Applicant is referring to a memory. This is disclosed by **Mann**, figure 1, element 106. Applicant's arguments do not clearly identify these differences. As such, claim 9 is rejected in the manner previously indicated. Furthermore, Applicant clearly is afforded the opportunity to respond as Applicant understood and responded to the rejections of related claims 1, 4, 5, 7 and 8.

Seventh, Applicant apparently argued claims 10-13, 23 and 30 are allowable based on a previous indication of allowability. However, this ignores the USC § 102 and 35 USC § 103, which help set out the legal basis for using of various forms of prior art in making a rejection of a claimed invention. As long as Applicant's claimed invention reads upon prior art, Applicant is not entitled to a patent. Furthermore, *newly* cited prior art was used in making additional rejections of the claims. Clearly, upon searching and considering Applicant's disclosure and amendments, additional prior art was discovered, which does not allow a patent to be allowed.

Eighth, Applicant argued **Torrey** fails to teach dynamic scan operations to load a write mode scan register. Applicant then quotes both **Torrey** ("configuration register ... may be accessed by either the serial ..."; reproduced in part) and Applicant's own Specification ("Generally, scan design approaches include an operation whereby certain desired logic patterns are serially inputted"; reproduced in part). Clearly, **Torrey** does disclose the general scan operation of a register (serial manipulation). Any additional details provided by Applicant's Specification are specific types of a scan operation, which are not necessarily included within the broadest reasonable interpretation of the claim language. Furthermore, actually reading the paragraph Applicant cites from in the Specification (page 35, lines 11-23): "The registers defined above may be loaded in any manner known in the art, and in one embodiment they are loaded using scan string technologies. Generally, scan design ...". Scan registers are prior art and as such, should the base claims be rejected properly (which they are), cannot make the claimed invention patentably distinct over the prior art (by definition).

Ninth, Applicant argued there is no motivation to combine **Torrey** with the other cited prior art. This is untrue. One of ordinary skill in the art at the time of invention would recognize that the existence of scan register technology itself provides amply evidence of motivation to implement registers as scan registers. Clearly, serially operated registers are at least useful for having fewer inputs than parallel registers (less complex, less expensive).

Tenth, Applicant argued **Mann, Ryan** and **Torrey** did not disclose dynamically-configurable write mode selection enabling different selected subsets of information

storage for a first to second defined times. This is untrue, for the limitation in question is far too broad to have much meaning. Nothing clearly states when or how the first and second defined times are *defined*. **Ryan** demonstrated selecting information (column 6, line 66 to column 7, line 2) and thus the information must be different from one selected moment to another selected moment. Thus, the first and second defined times are related to at least the differing selected moments of **Ryan's** signals (ie. when the selected signals are defined).

Eleventh, Applicant argued the cited prior art, with respect to claim 13, did not disclose the additional limitation concerning enabling the selected subset of information to be stored in memory, if a current function value within the selected subset of information matches a predetermined address value, in response to a corresponding write mode selection identifier. This was disclosed by the cited prior art (**Mann**: column 10, lines 15-67; and **Torrey**: column 9, lines 31-35). The broadest reasonable interpretation of the claim language allows for the function "value" simply being address of where the function starts, which the cited prior art is clearly tracing/profiling.

Twelfth, Applicant argued **Mann** does not relate to a plurality of functional modules external to the integrated circuit. This is not correct. **Mann** showed, in addition to the previously cited portion, additional references to external functional modules (Figure 1, element 106).

The above issues are believed to address all of Applicant's concerns. Additional claims are dependent upon the above claims and the rejection stands in its entirety. The

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newly added amendments are rejected in the same manner as the claims to which they are amended.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

11. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

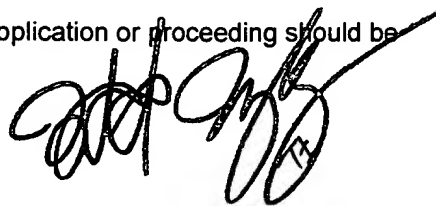
Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Wood whose telephone number is (703)305-3305. The examiner can normally be reached 7:30am - 5:00pm Monday thru Thursday and 7:30am - 4:00pm every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (703)305-9662. The fax phone numbers for the organization where this application or proceeding is assigned are (703)746-7239 for regular communications and (703)746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

William H. Wood
March 5, 2004



Todd Ingberg
Primary Examiner
Group 2100